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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.        | CONFIRMATION NO.       |
|---|-------------|----------------------|----------------------------|------------------------|
| 10/559,614  | 05/19/2006  | Jamie Gertsch        | 095309.52468US             | 1682                   |
| 23911 7590 05/28/2008<br>CROWELL & MORING LLP<br>INTELLECTUAL PROPERTY GROUP<br>P.O. BOX 14300<br>WASHINGTON, DC 20044-4300 |             |                      | EXAMINER<br>PREVIL, DANIEL |                        |
|   |             |                      | ART UNIT<br>2612           | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>05/28/2008    | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/559,614

**Applicant(s)**

GERTSCH ET AL.

**Examiner**

DANIEL PREVIL

**Art Unit**

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date 12/02/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract is not limited to a single paragraph on a separate sheet. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "it" in line 3 renders the claim vague and indefinite.

Claims 2-17 are rejected for the same reason since they depend from a rejected claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-9, 11-12, 14-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergan et al. (US 6,204,778) in view of Obradovich (US 6,982,635).

Regarding claims 1-2, 9, 11-12, 17, Bergan discloses a method for preventing vehicle rollover for a vehicle traveling on a road (col. 10, lines 1-13), said method comprising: for each present position of said vehicle as it travels on said road, forecasting future speed of said vehicle as a function of future position of said vehicle on said road, based on an assumption regarding a driving style of a driver of said vehicle, and based on a map containing road geometry data and statistical speed data for vehicles traveling said road (col. 24, lines 6-34); and generating a rollover warning for any current position of said vehicle on said road at which the forecast future speed for at least one particular point on said road forward of said vehicle exceeds the determined maximum safe speed at said at least one particular point (col. 24, lines 15-26).

Bergan discloses all the limitations above but fails to explicitly disclose at each said present position of said vehicle, determining a maximum safe speed of said vehicle

for each of a plurality of points on said road forward of said vehicle, based on a maximum lateral acceleration, on said road geometry and on physical parameters of said vehicle.

However, Obradovich discloses at each said present position of said vehicle, determining a maximum safe speed of said vehicle for each of a plurality of points on said road forward of said vehicle, based on a maximum lateral acceleration, on said road geometry and on physical parameters of said vehicle (fig. 18; col. 13, lines 26-40; col. 18, lines 24-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Obradovich's maximum lateral acceleration into Bergan's system in order to accurately prevent vehicle rollover by predicting roll angles thereby avoiding the rollover accident for the safety purposes.

Regarding claim 3, Bergan discloses wherein said vehicle speed is forecasted based on a model of driving behavior derived from data contained in said map data (fig. 6; col. 24, lines 15-27).

Regarding claim 4, Bergan discloses wherein the future vehicle speed is forecasted based on an assumption that the driver of the vehicle will maintain the same percentile position relative to speed data contained in said map, throughout the road forward of said vehicle (col. 25, lines 1-42).

Regarding claim 5, Bergan discloses wherein said model of driving behavior assumes that the vehicle will maintain a constant speed (col. 25, lines 1-13).

Regarding claim 6, Bergan discloses wherein said model assumes that the

vehicle will maintain a constant acceleration (col. 25, lines 1-13).

Regarding claim 7, Bergan discloses wherein said model forecasts speed of said vehicle as a median speed for each point on said road, based on vehicle speed data contained in said map (col. 24, lines 15-27).

Regarding claim 8, Bergan discloses wherein said maximum safe speed is determined based on curvature of said road at each of said points on said road forward of said present position (col. 24, lines 6-27).

Regarding claims 14-15, Bergan and Obradovich disclose all the limitations set forth in claim 1 and Obradovich further discloses wherein said statistical speed data contained in said map comprises speed data collected from actual truck operations over roads contained in said map, using GPS data to determine points along said road (col. 18, 25-67; col. 19, lines 1-51). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Obradovich's GPS data to determine points along said road into Bergan's system in order to accurately prevent vehicle rollover by predicting roll angles thereby precluding the rollover accident for the safety purposes.

Regarding claim 16, Bergan and Obradovich disclose all the limitations set forth in claim 1 and Obradovich further discloses GPS points are map matched with a commercially available digital map; a GPS trace is broken into map segments based on said map; all GPS traces on each segment are collected; B-splines are fit to said traces to determine a centerline of the road; curvature along each segment is determined based on a derivative of said splines (fig. 18; col. 18, lines 24-67). Therefore, it would

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have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Obradovich's GPS data into Bergan's system in order to accurately preclude vehicle rollover by predicting roll angles thereby avoiding rollover accident for the safety purposes.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergan in view of Obradovich as applied to claim 1 above, and further in view of Letkomiller et al. (US 6,369,712).

Regarding claim 10, Bergan and Obradovich disclose all the limitations set forth in claim 1 but fail to explicitly disclose wherein said cost function further takes into account fuel consumption of said vehicle.

However, Letkomiller discloses wherein said cost function further takes into account fuel consumption of said vehicle (col. 18, lines 15-18).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Letkomiller's fuel consumption into Bergan and Obradovich's system in order to warn the driver when the gas tank is emptying thereby ensuring the safety of the vehicles.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergan in view of Obradovich as applied to claim 1 above, and further in view of Lemelson (US 5,364,205).

Regarding claim 13, Bergan and Obradovich disclose all the limitations set forth in claim 1 but fail to explicitly disclose wherein said remedial action includes an automatic slowing of the vehicle.

However, Lemelson discloses wherein said remedial action includes an automatic slowing of the vehicle (col. 1, lines 46-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Lemelson's automatic slowing of the vehicle into Bergan and Obradovich's system in order to preclude vehicle from colliding with other cars thereby ensuring the safety of the vehicles.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Neiss et al. (US 6,990,401) discloses predictive speed control for a motor vehicle.

Van der Pol et al. (US 6,397,133) discloses vehicle rollover safety system.

Aga et al. (US 6,694,225) discloses rollover determining apparatus and methods.

Wilson (US 6,510,382) discloses method for obtaining precision road maps.

Ravani et al. (5,979,581) discloses lateral-----cruise control.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL PREVIL whose telephone number is (571)272-2971. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel WU can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP  
May 24, 2008.

/Daniel Previl/

Primary Examiner, Art Unit 2612